

**Montana Board of Oil and Gas Conservation
Environmental Assessment**

Operator: North Range Exploration, LLC

Well Name/Number: Oro Grande 1-19

Location: NE SW Section 19 T11N R33E

County: Rosebud, MT; **Field (or Wildcat)** Wildcat

Air Quality

(possible concerns)

Long drilling time: No, 7 to 10 days drilling time.

Unusually deep drilling (high horsepower rig): No, single derrick drilling rig, 5,000' TD, Heath Formation.

Possible H₂S gas production: Yes possible, low level H₂S.

In/near Class I air quality area: No, class I air quality area in the area of review.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: No special concerns – using small rig to drill to 5,000' TD. If there are existing pipelines for natural gas in the area, associated gas can be gathered or if no gathering system nearby, associated gas can be flared under Board Rule 36.22.1220.

Water Quality

(possible concerns)

Salt/oil based mud: No, freshwater and freshwater mud system.

High water table: No high water table anticipated.

Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral tributary drainage to Rattlesnake Creek, about 1/16 of a mile to the south.

Water well contamination: No, no water wells in the section. Surface hole will be drilled with freshwater and freshwater mud to 250'. Steel surface casing will be run and cemented to surface to protect ground water (rule 36.22.1001). If productive, 4 1/2" production casing will be cemented to surface.

Porous/permeable soils: No, silty sandy clay soils.

Class I stream drainage: No Class I stream drainages.

Mitigation:

☐ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☐ Closed mud system

☐ Off-site disposal of solids/liquids (in approved facility)

☐ Other: _____

Comments: 250' of surface casing cemented to surface adequate to protect freshwater zones. Also, freshwater and fresh water mud systems to be used (rule 36.22.1001). If productive, 4 1/2" production casing will be cemented to surface.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No, stream crossings anticipated.

High erosion potential: No, cut and fill to be determined by dirt contractor. Small self leveling single derrick drilling rig will be used.

Loss of soil productivity: No, location will be restored after drilling in nonproductive and if productive unused portion of the drillsite will be reclaimed.

Unusually large wellsite: No, 300'X300' location size required.

Damage to improvements: Slight, surface use is prairie grazing grassland.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☒ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☐ Other _____

Comments: Surface access will be over existing county roads and well/ranch trails. 3047' new access will be built to existing well/ ranch road. Cuttings will be buried in the earthen pit. Fluids will be allowed to evaporate. Pit will be backfilled when dry. No special concerns

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: No, no residences within 1 mile from this wellsite.

Possibility of H2S: Slight chance.

Size of rig/length of drilling time: Small drilling rig/short 7 to 10 days drilling time.

Mitigation:

☐ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Adequate surface casing and operational BOP should mitigate any problems. (

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Only species identified as threatened or endangered is the Black-footed Ferret. Candidate species are the Greater Sage Grouse and the Sprague's Pipit. NH tracker website indicates, four (4) species of concern:

Black-tailed Prairie Dog, Burrowing Owl, Greater Sage Grouse and Western Hog-nosed Snake.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: _____

Comments: Private surface grassland. There may be species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: _____

Comments: Private surface grassland. There may be possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: No concerns. 4,100' Heath Formation oil test.

Remarks or Special Concerns for this site

Well is a 5,000' Heath Formation test.

Summary: Evaluation of Impacts and Cumulative effects

No long term impact expected. Some short term surface impacts will occur, but will be mitigated in time.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): Thomas Richmond

(title:) Administrator

Date: September 27, 2013

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC
website

(Name and Agency)

Water wells in Musselshell County

(subject discussed)

September 27, 2013

(date)

MT Cadastral website

Ownership, topo map, aerial photos

September 27, 2013

(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____